Amendments to the Claims

1-26. (Canceled)

27. (New)   An ISDN terminal endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel; and

an automatic supplementary service detector that uses ISDN transactions on the supported channels to test the availability of at least one ISDN supplementary service selected from the group of services consisting of call conferencing, call hold, call transfer, call waiting, call forwarding, and X.25/D channel packet data feature.

28. (New)   The ISDN terminal endpoint of claim 27, the automatic supplementary service detector also providing an indication, based on the results of an auto-request evaluation, of whether the supplementary service is available for use.

29. (New)   The ISDN terminal endpoint of claim 28, further comprising a device configuration register, wherein the indication provided by the automatic supplementary service detector is provided to the device configuration register.

30. (New)   The ISDN terminal endpoint of claim 29, further comprising a data router.

31. (New)   The ISDN terminal endpoint of claim 30, further comprising a network management agent having access to the device configuration register.

32. (New)   The ISDN terminal endpoint of claim 30, further comprising a supplementary services availability indicator having access to the device configuration register.

33. (New)   An ISDN terminal endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel;

means for auto-generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

means for auto-answering the first call using the second B-channel;

means for auto-generating a D-channel hold request for one of the B-channels connected to the first call;

means for, if the hold is acknowledged, auto-generating a second D-channel call setup request using the B-channel of the hold request, and receiving an acknowledgment across the D-channel related to the second D-channel call setup request; and

means for evaluating the acknowledgement to determine whether a call conferencing ISDN supplementary service is available.

34. (New)   The ISDN endpoint of claim 33, wherein the acknowledgment comprises, when the call conferencing service is available, a call establishment message from the ISDN network for the second call.

35. (New)   An ISDN endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel;

means for auto-generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

means for auto-answering the first call using the second B-channel;

means for auto-generating a D-channel hold request for one of the B-channels connected to the first call;

means for receiving an acknowledgment across the D-channel related to the D-channel hold request; and

means for evaluating the acknowledgment to determine whether a call hold ISDN supplementary service is available.

36. (New)   An ISDN endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel;

means for auto-generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

means for auto-answering the first call using the second B-channel;

means for auto-generating a D-channel hold request for one of the B-channels; and,

means for, if the hold is acknowledged, auto-generating a D-channel call transfer request to initiate a second call using the B-channel of the hold request to a second directory number associated with the ISDN terminal equipment, and receiving an acknowledgment across the D-channel related to the call transfer request; and

evaluating the acknowledgment to determine whether a call transfer ISDN supplementary service is available.

37. (New) The ISDN endpoint of claim 36, wherein the acknowledgment comprises, when the call transfer service is available, a call setup message from the ISDN network for the second call.

38. (New) An ISDN endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel;

means for auto-generating a D-channel call setup request to initiate a first call, using the first B-channel, to a first number;

means for auto-generating a second D-channel call setup request to initiate a second call using the second B-channel to the originating directory number associated with the first call;

means for receiving an acknowledgment across the D-channel related to the auto-request; and

means for evaluating the acknowledgment to determine whether a call waiting ISDN supplementary service is available.

39. (New) The ISDN endpoint of claim 38, wherein the acknowledgment comprises, when the call waiting service is available, a message from the ISDN network that a second call is incoming to the originating directory number.

40. (New) An ISDN endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel;

means for auto-generating a call forward request to forward calls directed to a first directory number associated with the terminal equipment to a second directory number associated with the terminal equipment; and

means for auto-generating a D-channel call setup request to initiate a first call to the first directory number;

means for receiving an acknowledgment across the D-channel related to the call setup request; and

means for evaluating the acknowledgment to determine whether the call forward request was successful.

41. (New)   An ISDN endpoint comprising:

an ISDN network interface capable of supporting at least first and second B-channels and one D-channel;

means for transmitting an auto-request, for an ISDN transaction that exercises an X.25/D channel packet data feature ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises generating an identity request for an auto-assigned X.25/D channel identity from the ISDN network;

means for receiving an acknowledgment across the D-channel related to the auto-request, wherein the acknowledgment comprises, when the service is available, a message from the ISDN network indicating that an X.25 D channel has been assigned; and

means for evaluating the acknowledgment to determine whether the X.25/D channel packet data feature ISDN supplementary service is available.

42. (New)   The ISDN endpoint of claim 41, further comprising means for stepping through a range of possible terminal equipment identifiers, when the auto-request for an auto-assigned X.25/D channel identity is denied, and for each identifier in the range, generating an identity request for an X.25/D channel identity using that identifier, and determining that the X.25/D channel packet data feature is available when any one of the identity requests is acknowledged by a message from the ISDN network indicating that an X.25 D channel has been assigned.

43. (New)   An article of manufacture containing computer instructions that, when executed by a processor, cause the processor to perform a method for operating ISDN

terminal equipment connected to an ISDN network via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises a call conferencing ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

answering the first call using the second B-channel;

generating a D-channel hold request for one of the B-channels; and,

if the hold is acknowledged, initiating a second call using the B-channel of the hold request;

receiving an acknowledgment across the D-channel related to the auto-request; and

evaluating the acknowledgment to determine whether the auto-request was successful.

44. (New)   The article of manufacture of claim 43, wherein the acknowledgment comprises, when the service is available, a call establishment message from the ISDN network for the second call.

45. (New)   An article of manufacture containing computer instructions that, when executed by a processor, cause the processor to perform a method for operating ISDN terminal equipment connected to an ISDN network via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises a call hold ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

answering the first call using the second B-channel; and

generating a D-channel hold request for one of the B-channels;;

receiving an acknowledgment across the D-channel related to the auto-request,-wherein the acknowledgment comprises, when the service is available, a hold acknowledgment message from the ISDN network; and

evaluating the acknowledgment to determine whether the auto-request was successful.

46. (New)   An article of manufacture containing computer instructions that, when executed by a processor, cause the processor to perform a method for operating ISDN terminal equipment connected to an ISDN network via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises a call transfer ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-channel, to a directory number associated with the ISDN terminal equipment;

answering the first call using the second B-channel;

generating a D-channel hold request for one of the B-channels; and,

if the hold is acknowledged, initiating a second call using the B-channel of the hold request to a second directory number associated with the ISDN terminal equipment;

receiving an acknowledgment across the D-channel related to the auto-request; and

evaluating the acknowledgment to determine whether the auto-request was successful.

47. (New)   The article of manufacture of claim 46, wherein the acknowledgment comprises, when the service is available, a call setup message from the ISDN network for the second call.

48. (New)   An article of manufacture containing computer instructions that, when executed by a processor, cause the processor to perform a method for operating ISDN terminal equipment connected to an ISDN network via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises a call waiting ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises:

generating a D-channel call setup request to initiate a first call, using the first B-channel, to a first number; and,

initiating a second call using the second B-channel to the originating directory number associated with the first call;

receiving an acknowledgment across the D-channel related to the auto-request; and

evaluating the acknowledgment to determine whether the auto-request was successful.

49. (New)   The article of manufacture of claim 48, wherein the acknowledgment comprises, when the service is available, a message from the ISDN network that a second call is incoming to the originating directory number.

50. (New)   An article of manufacture containing computer instructions that, when executed by a processor, cause the processor to perform a method for operating ISDN terminal equipment connected to an ISDN network via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises a call forwarding ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises:

generating a call forward request to forward calls directed to a first directory number associated with the terminal equipment to a second directory number associated with the terminal equipment; and

placing a call to the first directory number;
receiving an acknowledgment across the D-channel related to the auto-request; and

evaluating the acknowledgment to determine whether the auto-request was successful.

51. (New)   An article of manufacture containing computer instructions that, when executed by a processor, cause the processor to perform a method for operating ISDN terminal equipment connected to an ISDN network via an interface having at least two B-channels and one D-channel, the method comprising:

transmitting an auto-request, for an ISDN transaction that exercises an X.25/D channel packet data feature ISDN supplementary service, to the ISDN network across the D-channel, wherein transmitting an auto-request comprises generating an identity request for an auto-assigned X.25/D channel identity from the ISDN network;
receiving an acknowledgment across the D-channel related to the auto-request, wherein the acknowledgment comprises, when the service is available, a message from the ISDN network indicating that an X.25 D channel has been assigned; and

evaluating the acknowledgment to determine whether the auto-request was successful.

52. (New)   The article of manufacture of claim 51, the method further comprising, when the request for an auto-assigned X.25/D channel identity is denied, stepping through a range

of possible terminal equipment identifiers, and for each identifier in the range, generating an identity request for an X.25/D channel identity using that identifier, and determining that the X.25/D channel packet data feature is available when any one of the identity requests is acknowledged by a message from the ISDN network indicating that an X.25 D channel has been assigned.